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ABSTRACT

Based on a literature review, this paper proposes an approach to identifying indicators of learning for English composition courses at the college level. Section 1 provides a rationale for using curricular artifacts as a means to identify indicators. Section 2 describes the proposed taxonomy of model indicators and its framework which uses the broad categories of knowledge, skills--grouped into those exhibited in the written product and those demonstrating cognitive abilities--and affect. Section 3 presents the list of proposed indicators with relevant studies cited to justify each item's inclusion in the taxonomy. Proposed indicators of knowledge evaluate the following: knowledge of the composing process; understanding of the rhetorical problem; composing--strategies and metacognition; knowledge of the planning process; knowledge of the review process; self-reflection; knowledge of the need for rhetorical specification; audience awareness and writer-reader interaction; genre and discourse community; collaboration; and topic knowledge. Proposed indicators of skills cover: basic mechanics; vocabulary fluency; sentence construction; organization between and among sentences; paragraphs; coherence; organization; voice; focus, contrast, and classification; concept formulation; analysis; inductive and deductive arguments; synthesis; dialectical thinking; metaphorical thinking; and reading/writing skills. Finally indicators of affect evaluate: motivation; confidence and risk taking; ability to accept criticism; sensitivity to situational exigencies; sensitivity to audience; sensitivity to context; and intellectual humility. Section 4 addresses possible questions concerning the feasibility of this approach. Contains over 120 references. (JB)

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Curriculum Research
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Indicators of Effective Student Learning in English Composition

A Review of the Literature

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THE CONTEXT FOR DEVELOPING INDICATORS OF LEARNING FOR ENGLISH COMPOSITION

In the U.S., English compositions programs in colleges and universities approach the instruction of composition in a number of ways. A recent review identifies 14 approaches to composition instruction (Davis, Scriven, & Thomas, 1987). The wide spectrum of institutions in the U.S. accounts for much of this diversity. Institutions differ in terms of mission, administrative structures, available resources, and students, each of which influences the type of instructional approach a composition program may employ. Students, in particular, have a significant influence in the determination of an instructional approach. In a survey of composition programs, Neel (1978) found that students' writing problems functioned as the determining factor in each program's selection of an instructional approach.

Within a single composition program, faculty may employ a variety of instructional approaches. We find two reasons for this occurrence. First, composition programs tend to grow incrementally, and as administrators and faculty come and go, they bring or take with them their preferences for instruction (White & Polin, 1983). Second, compared to other fields, such as nursing, in which curricula planning is mediated by the requirements of accrediting boards, English composition, in general, is unfettered by the requirements of accrediting boards or state agencies. For the most part, faculty are free to experiment with new instructional approaches.

The diversity of instructional approaches in English composition is also an outgrowth of the values and beliefs of faculty. Depending on the perspective of the faculty member, diversity may represent:

- the source of strength and vitality of a composition program (Martin, 1978);
- the importance of individualizing instruction to meet the needs of students from different cultural and linguistic backgrounds (Moss & Walters, 1993);
- the belief that there is no absolute standard of good writing (Belanoff, 1991);
- the ideal state of affairs in the field: one of continual transformation versus one of standardization (Covino, 1990; Peterson, 1993).

The diversity of programs and instructional approaches in English composition poses difficulties for program directors who wish to guide their curriculum development efforts based on a review of the program content and instructional practices of the field. Stewart (1989) reviewed 194 English programs and concluded that the field is something of a pedagogical porcupine whose protective nature discourages such curriculum development efforts. In developing curricula, program directors look inward toward the structure of the knowledge base, outward toward the social need for the subject, and sideways through comparison with other higher education institutions (Squires, 1990). When English composition program director look sideways, the landscape is difficult to discern. There is little in the way of a systematic description of the current instructional practices and goals of composition programs to assist program directors in reviewing their programs and considering alternative structures in use (White & Polin, 1983). A need exists for such a systematic description. For example, a continuing lack of definition and consensus concerning advanced curricula in English composition has resulted in a decision by some programs to eliminate general advanced composition courses (Adams & Adams, 1990).

Several surveys and descriptive studies have been conducted to detail the landscape of the field. Many of these studies have attempted to assess changes in the type and amount of writing instruction (e.g. Stewart, 1989; Werner et al., 1988). Others have examined differences in instructional goals among programs (e.g. Hogan, 1980; White & Polin, 1983, 1986; Witte et al., 1981). With a few exceptions, the data garnered from these studies, while fulfilling their intended purpose, have little to offer curriculum planning and evaluation efforts. The data is broad and is often expressed in terms of global changes in courses offerings or instructional aims. The studies provide little or no record of substance of what students have learned in English composition programs, information that may aid a program director in making meaningful decisions about curricula.

In response to the lack of "navigational charts" of what is being learned on the broader sea of knowledge, the U.S. Department of Education has commissioned efforts to develop indicators

of student learning in a number of disciplines (Adelman, 1988). Indicators of learning can be thought of evidence of what students have learned in a particular discipline. They address the general question of "What does it mean to be educated at the baccalaureate or associate level in English composition?" For policymakers, indicators provide data for answering questions such as "What kinds of knowledge are students bringing to the workforce and to society? For academic leaders, indicators provide data for answering questions such as "What types of learning are emphasized in our program?" The answer to each of these questions may be expressed in terms of the knowledge, cognitive skills, technical skills, and affective learning students have attained.

Indicators have several practical uses. Faculty and program directors can use the data obtained by the indicators to clarify the objectives of their programs and to facilitate decisions related to curriculum development. In addition, indicator data gathered from a number of programs can be used to describe trends in the field from a national perspective and to assist scholars in examining issues related to the structure of the discipline.

The purpose of this paper is to propose an approach for identifying indicators of learning for English composition and for measuring the existence of these indicators within English composition programs. Based on a review of the literature, the paper develops a taxonomy of model indicators of learning for English composition, which will be subject to a subsequent review by a national advisory board of English composition faculty. The paper argues that the existence of these model indicators can be measured through content analyses of syllabi, texts, tests, and course assignments of English composition programs. Section one of the paper provides a rationale for using curricular artifacts as a means to identify indicators. Section two discusses the proposed taxonomy of model indicators and provides a framework for categorizing the indicators. Section three reviews the proposed taxonomy in detail. Finally, section four examines some issues pertaining to the feasibility of proceeding with the proposed approach.

The process of developing the taxonomy of learning indicators of English composition

proved to be a daunting task. The ERIC index alone contains 9,364 citations on writing skills, 1,235 citations on College English, and 787 citations on freshmen composition. In 1991, 1,925 articles, books, dissertation, and papers were published according to the Conference on College Composition and Communication (CCCC) bibliography of composition and rhetoric.

Since the project at hand entailed investigating the feasibility of using syllabi, texts, exams, and assignments to infer indicators of learning, the review was based extensively on the literature connected with:

1. The evaluation and assessment of writing skills (e.g. Cooper & Odell, 1977; Davis, Scriven, & Thomas, 1987; Diederich, 1974; Ruth & Murphy, 1988; White, 1994).

2. Reviews of writing assessment programs at a range of institutions (e.g. Brand, 1991; Cullen, 1987; Faigley, et al, 1985; Gilson, 1989; Sternglass, 1993).

3. Studies that compare different writing programs (e.g. Witte, Cherry & Meyer 1982; White & Polin, 1982, 1986).

4. Profiles of writing programs (e.g. Bartholomae & Petrosky, 1986; Kutz, et al., 1993)

5. Research on the process of composition (e.g. Flower, 1981; Flower, et al., 1990; Berieter & Scaradamalia 1987).

The review examined those citations in ERIC abstract system on college English related to teaching methods, writing evaluation, evaluation criteria, writing assignments, writing research, and freshmen composition. In addition, the review examined articles from a broad range of journals including: *Advanced College Composition*, *College Composition and Communication*, *College English*, *Freshmen English News*, *Journal of Teaching Writing*, *Journal of Basic Writing*, *Research in the Teaching of English*, and *Written Communication*.

I. TYPES OF INDICATORS AND SUPPORT FOR THE USE OF CURRICULAR ARTIFACTS AS INDICATORS

Several types of indicators of learning have been developed, each having its own set of advantages and disadvantages in terms of cost, the ease of collecting data, the ease of reaching

consensus on the indicator, and the validity and reliability of the indicator. This section reviews the basic types of indicators and advocates the use of direct measures of instructional processes, specifically curricular artifacts such as syllabi, as a means for measuring indicators of learning in English composition. The use of curricular artifacts is warranted because curricular artifacts accurately reflect instructional processes, they carry a great deal of information, and their usage as a means to assess the condition of the field is commonly accepted. In addition, curricular artifacts can provide valuable information to map out the variety of instructional experiences in the field. This section of the paper will discuss many of these points in more detail.

The domain and the nature of an indicator determine its type (Ewell & Jones, 1993). The domain of an indicator relates to whether an indicator measures a learning *outcome* or an instructional *process*, and the nature of an indicator pertains to whether the data to measure the outcome or process is gathered in a *direct* or *indirect* means. For example, the National Assessment of Educational Progress (NAEP) is intended to *directly* measure the *outcomes* of student learning in K-12 education. Direct, outcome-based indicators of learning are helpful because they give faculty members diagnostic information to adjust their instruction to the successes or difficulties of their students (Grandy, 1988). However, they require considerable time and effort to develop because of their complex technical properties and the consensus-building required to define the abilities being assessed (Ewell & Jones, 1993). In addition, they tell us very little about current instructional practices and "key features" of the higher education enterprise (Ewell & Jones, 1993).

Because of the difficulty and cost of producing direct-outcome indicators, process-based and indirect indicators of learning have been developed. They include direct measures of instructional processes and indirect measures of learning outcomes and processes such as the results of existing assessments, institutional reports on resource utilization, and self-reports from graduates and students (Ewell & Jones, 1993). Direct measures of instructional processes are helpful because they provide information on the features of higher education - information that is

especially needed given the immense variety of the nation's higher education system. Their drawback is that, short of an empirical study linking changes in instructional processes to corresponding gains in learning outcomes, they provide only "hints and guesses of the degree to which college graduates possess the abilities of interest" (Ewell & Jones, 1993, p. 138). Warren (1988) contends that these hints and guesses can become reliable and valid inferences of learning, if the intended learning outcomes connected with instructional processes, such as exams and assignments, are explicitly categorized and faculty use these categories in evaluating the performance of their students.

Useful and meaningful indicators of learning in English composition must accurately reflect the actual undergraduate curriculum in the field as practiced at many institutions. The process of teaching English composition is complex and can be successfully accomplished in many different ways. Six different instructional approaches to writing were found in one study of composition programs using a relatively small sample of nineteen institutions (White & Polin, 1982). Consequently, the indicators must encompass the unique learning objectives of a variety of programs. In addition, the indicators must be substantive measures of student learning. Mechanical measures, such as grade point averages, degrees awarded, or persistence rates, while relatively easy to obtain, do not provide this information. Finally, the indicators must register the differences in learning that occur as a result of different course-sequences within a program. Students who sequence their courses differently experience distinctly different kinds of learning, and, within any one program, students may have several course-sequences to select from.

Exams, assignments, texts, and syllabi may meet the considerations raised above. They settle the thorny problem of how to decipher a program's curricular philosophy and learning objectives. If one views the curriculum as a *design* for learning, then, syllabi, exams, and assignments represent the *artifacts* of the design process (Toombs & Tierney, 1991). They are the physical embodiment of the teaching philosophy and learning objectives of an English composition program. Moreover, they reflect faculty members' views of their academic field, their

background, their assumptions about educational purpose, and their views about the instructional setting (Stark et al., 1988). Most importantly, they carry substantive meaning of what students are expected to learn (Warren, 1988). If a class or program emphasizes specific features of writing, the syllabi, exams, and assignments should also emphasize those matters (White, 1985). In short, they reflect what a program requires of its students, what happens in a classroom or program, and what students do as part of their education (Ewell & Jones, 1993). In addition, the results of analyses of exams, assignments, texts, and syllabi from individual courses can be combined in a variety of ways to reflect the range of course-sequences students might take. Furthermore, the methodology can be applied to students' transcripts to compare and contrast the gains in learning individual students have made through various course-sequences.

English composition syllabi, in particular, have the potential to be useful indicators of learning because English composition faculty generally include more information on their syllabi than faculty from other disciplines. In a study on course planning, Stark et al. (1988) analyzed the learning objectives of 89 introductory courses, including 11 composition courses, using syllabi from a range of institutions and academic fields. The researchers found that eleven percent of the sample syllabi consisted of "philosophy statements" - the most prevalent type of syllabus for composition courses - that included the basic course information, a statement of goals and objectives, a philosophy statement, and a course rationale. Further analysis of the English composition syllabi revealed that the instructors had very inclusive syllabi. Compared to instructors in other disciplines, English composition instructors "more frequently included information about goals and objectives, learning facilities and resources, discipline content, assumptions about student characteristics, their own educational philosophy, and assignment/activity rationale" (Stark, et al., 1988, p. 141). The researchers concluded that the syllabi were so inclusive "in part, because composition curricula are skill oriented, the courses serve a wide range of beginning students, and standards are frequently established by programs, not individuals" (Stark, et al., 1988, p. 141).

English composition faculty have found the analysis of curricular artifacts to be an effective

means to evaluate faculty performance. A national survey of writing program administrators found that 51 percent administrators agreed with the practice of reviewing assignments, exams, and teaching materials as a means for conducting faculty evaluations (Wilcox, 1973). In contrast, 40 percent of the administrators agreed with the use of student evaluations and 36 percent supported the practice of classroom observations in conducting faculty evaluations. Wilcox's study pre-dates the shift in the instructional focus of the field toward the "writing process," and this shift in focus may lessen the weight of his findings.

National samples of curricular artifacts have also been used to assess the condition of the field of English composition. Syllabi were used as an analytical tool in one of the first nationwide studies of freshman English composition programs. Kitzabher (1963) based his analysis of 95 college and university programs on data collected from syllabi and site visits. In her review of trends and issues in advanced composition, Sturm (1980) reviewed 300 syllabi as well as course descriptions. Stewart (1989) used syllabi and college catalogs in his informal study of the undergraduate English major programs of 194 colleges and universities. White and Polin (1983) incorporated instructional materials in their analysis of instructional approaches of the English composition programs at the 19 state universities in California.

To increase the reliability and validity of curricular artifacts as indicators of learning, Ewell and Jones (1993) identify two additional concerns that should be addressed. First, as "proxy" indicators, trends prevalent in syllabi, texts, assignments or examinations should be demonstrably related to changes in student attainments in learning. This will require pilot testing and empirical research. Second, a method must be created to identify the learning indicators contained in a nationally-representative sample of curricular artifacts. Given the wide spectrum of English composition programs, the range of learning indicators must be sufficiently diverse to reflect the uniqueness of each program without being so "noisy" that they are difficult to interpret. Developing categories to analyze the learning indicators resident in curricular artifacts will require an initial period of consensus-building within the field. The next section of this paper discusses

this process and proposes a tentative framework of learning indicators.

II. DEVELOPING A FRAMEWORK OF INDICATORS

The challenge before the researchers in this project is to develop a systematic process to analyze syllabi, exams, assignments, and texts for the purposes of identifying the learning indicators of an English composition program. A key task to realizing this goal is to reach an agreement on a broad framework of indicators common to English composition programs. This framework would essentially serve as a guide or check list to be used when reviewing syllabi, exams, assignments, and texts. The task of developing a framework of English composition learning indicators is a slippery one because of the diverse range of opinions regarding the purposes of the curriculum and the ends of undergraduate education. Over time, the curriculum has been viewed and described alternatively as content or subject matter, a program of planned activities, intended learning outcomes, cultural reproduction, experience, a set of discrete tasks and concepts, and an agenda for social reconstruction (Schubert, 1986).

In pursuing the task of describing the distinctive features of a curriculum, researchers have sought to identify its common elements. Herrick (1950), identified the individual elements of the curriculum as learning objectives, subject matter, and learning activities. Bloom et al. (1956) pursued this track further and developed the taxonomy of learning objectives, which has facilitated the analysis of curricula (Krathwohl, et al., 1964). The taxonomy consists of a number of categories within each of its three main parts - the cognitive, the psychomotor, and the affective domains.

The cognitive and affective domains of Bloom's taxonomy are relevant to our discussion of the English composition curriculum. The cognitive domain includes those objective that deal with the recall or reorganization of knowledge and the development of increasingly complex intellectual abilities and skills such as analysis, synthesis, and evaluation. The affective domain includes objectives that describe changes in interest, attitudes, values, and the development of appreciations.

Bloom's taxonomy has been used in prior studies to analyze curricular artifacts, including exams and syllabi. Braxton and Nordvall (1985) rated 158 examinations using Bloom's taxonomy to determine if liberal arts colleges with different admission requirements reflected this difference in the quality of their instruction. They found the examinations of the more selective liberal arts colleges contained a greater number of questions related to analysis, synthesis, and evaluation of information than the less selective colleges. The examinations of the less selective colleges contained more questions related to the recall or recognition of course content. Ratcliff et al. (1991) used Bloom's taxonomy to rate syllabi and examinations in a study of the effect of coursework patterns, advisement, and course selection on the development of students' general learning abilities at three selective institutions. The researchers found that the questions on the final exams at the three institutions tested the development of "lower order cognitive abilities (e.g. knowledge, comprehension), rather than the development of higher order cognitive abilities (e.g. application, analysis, synthesis, and evaluation)" (Ratcliff, et al., 1991, p. 57).

In both studies, the researchers raised concerns regarding the selection and training of coders. In the Braxton and Nordvall study, the coders had no expertise in the academic disciplines under review and they relied on the wording of questions, not their answers, to rate the exams. Using this procedure, a coder may have rated a question as eliciting "recognition" or "recall," even though the true intentions of the faculty member was to elicit a response requiring higher-order thinking skills. The Ratcliff et al. (1991) study underscored the importance of training coders. In their study, the results of the analysis of syllabi and examinations were skewed upward toward higher-order skills because each rater "included higher order skill categories as present (usually implicitly) if a simple phrase was included in a syllabus or a test contained even one question that require higher order cognitive skills" (1991, p. 57).

In the wake of calls for greater institutional accountability in 1980s, Bloom's taxonomy has been adapted for the purposes of program assessment by Ewell (1987) and Terenzini (1989), two researchers who have conducted extensive research on assessment. In identifying the learning

objectives connected with the instruction of English composition, this review proposes to adopt the Ewell (1987) framework as follows:

1. Knowledge
2. Skills
    - 2.1 Writing Skills Exhibited in the Written Product
    - 2.2 Cognitive Abilities
3. Affect

Justification for the inclusion of each outcome in the proposed framework follows.

1. KNOWLEDGE

According to Ewell (1987), knowledge outcomes principally relate to the possession of the cognitive content and principles of inquiry associated with a discipline. Knowledge outcomes also measure students' familiarity with the broad history of a particular discipline, their knowledge of pressing questions in the field, their awareness of various subfields, and their knowledge of research methods and techniques (Ewell, 1987).

While knowledge outcomes are vital to all disciplines, they may hold less significance to English composition faculty compared to faculty in other disciplines. Stark et al.'s (1988) study on course planning by faculty found that English composition faculty were less likely to define their field as a discipline consisting of sets of concepts, principles, or ideas to be explained to students. Instead, they were more likely to describe their field as consisting of an interrelated set of values or the group of people who share pursuit of those interests. Rather than teaching concepts and principles, the English composition faculty saw their role as promoting student growth, skill acquisition, or personal enrichment (Stark, et. al, 1988).

2. SKILLS

The skills dimension focuses on application, that is, not on what students know, but what they can do (Ewell,1987). This an important dimension to English composition because the mastery of writing entails the mastery of an instrumental intellectual skill rather than an intellectual subject like English literature or History (Davis, Scriven, & Thomas, 1987). However, because

subjects are easier to talk about, to teach, and to test, there is a temptation to try to convert the skill into a subject (Davis, Scriven, & Thomas, 1987).

2.1 SKILLS EXHIBITED IN THE WRITTEN PRODUCT

Studies clearly indicate that the first and foremost concern of writing faculty is to ensure that students' basic writings skills are sound. Working from a list of 11 instructional priorities, faculty in White and Polin's (1983) study of the composition programs at California's 19 state universities rated teaching for "competence with the basic units of prose (e.g. phrase, sentence level, paragraph)" and "correct grammar and usage" most frequently as very important to organizing their freshmen composition courses. Writing program directors and teachers espoused similar goals in Witte, Cherry, and Meyer's (1982) national study of freshmen writing programs. Directors and teachers ranked "write mechanically correctly prose" and "write coherent prose" as the top two goals of their freshmen composition programs.

2.2 COGNITIVE ABILITIES

There is substantial agreement within the field of English composition that writing instruction should be tied to the development of students' cognitive abilities, in particular, higher-order abilities such as analysis, synthesis, and evaluation. Traditional-age college students often have difficulty handling abstract college-level tasks. Basic writers are often "unable to practice analysis and synthesis and to apply successfully the principles thus derived to college tasks" (Lunsford, 1979, p. 38). McKinnon (1975) maintains that about 50 percent of students cannot cope with abstract propositions. For example, a study of regularly-admitted freshmen at the State University of New York, Buffalo, found that, while the freshmen wrote in ways that were almost entirely correct in usage and grammar, the writing of freshmen revealed a fundamental inability to think analytically about complex phenomena (Cooper, et al. 1980).

Insight from studies such as these has led composition scholars to conclude that "the

general skill of good writing cannot exist without good reasoning" (Davis, Scriven, & Thomas, 1987, p. 37). The ability to reason well is integrally tied to cognitive development. Spear (1983) contends that cognitive development is a process of formulating increasingly comprehensive abstractions. According to Moffet, evidence of progress in formulating comprehensive abstractions is exhibited in writing that proceeds:

- From recording (drama) to reporting (narrative) to generalizing (exposition) to theorizing (argumentation);
- From an intimate to a remote audience;
- From letters and diaries to first person narratives to third-person; narratives to essays of generalization to essays of logical operation;
- From perception, to memory, to ratiocination;
- From present to past to potential; (1981, p. 11).

Under such a framework, Moffet indicates that the goal of writing is not to "come out on top" but to play the whole range (1981, p. 12). In addition to writing expository and argumentative pieces, students should be able write descriptive and narrative pieces as well.

Based on Perry's (1970) theory of intellectual development, Hays (1983) contends that the maturity of students' thinking and writing develops in an identifiable, predictable series of stages. She found that traditional-age college students first construct arguments "using flat, simplistic, and unsupported assertions" (Hays, 1983, p. 140). At the next stage, students "display a reasonably full recognition of multiple perspectives ... but they lack the ability to deal with and resolve their implications" (Hays, 1983, p. 140). Ultimately, their writing becomes "more elaborated, more qualified, more concessionary, and yet at the same time more committed to a position ... Mature writers can also enter into points of view other than their own and fully engage them, and they develop the ability to shape their discourse to an audience's needs" (Hays, 1983, p. 141).

While English composition programs may aspire to produce writers who have the ability to analyze, synthesize, and evaluate information, Spear (1983) and others caution that students may experience a breakdown in their rhetorical and grammatical skills in the rush to develop these higher-order skills. Indeed, in a study of the development in writing in the high school and college

years, Freedman and Pringle (1980) found that while the college students displayed higher levels of abstraction in their writing, their rhetorical and grammatical skills were no different than the high school students. The researchers concluded that the cognitive demands of the writing tasks the college students were engaged in hindered the growth of their rhetorical skills. Sternglass (1993) reached a similar conclusion in her study on writing development. She found that students are often capable of having reasons for their views that they express, yet lack the "rhetorical sophistication to present them with appropriate conceptual linkages" (1993, p. 247).

How should composition programs develop students' cognitive abilities and ensure the growth of their rhetorical skills? Sternglass (1993) suggests that composition courses provide students with opportunities to practice analysis and synthesis and to master rhetorical forms and grammatical structures. Flower (1990) contends that students may, in fact, gain more knowledge from writing a rhetorical interpretation that includes synthesis than writing a purely information-driven synthesis. Flower (1990) finds that the true gauge of the cognitive complexity of a writing task is not the type of assignment (e.g. summary, synthesis) but the amount of knowledge transformation that happens in the head of the writer in the act of composing. The amount of knowledge that is transformed by the writer is a "function of prior knowledge, the amount and complexity of the information one is trying to transform, and the level at which invention is going on" (Flower, 1990, p. 65).

3. AFFECT

Affect is an umbrella term used to describe a wide range of concepts and phenomena such as feelings, motivation, emotions, attitudes, beliefs, values, appreciations, and preferences (McLeod, 1992). Affective outcomes in English composition are important indicators of learning because of their relationship to maturity in writing, critical thinking, and apprehension in writing.

Students' attitudes and beliefs about writing significantly affect their performance (Davis, Scriven, & Thomas, 1987). Their attitudes and beliefs about writing influence their use of the

knowledge they possess. Furthermore, changes in their attitudes and beliefs "often precede improvement in skills and can be considered short-term indicators of possible future changes" (Davis, Scriven, & Thomas,1987, p. 97).

The ability to think and write critically hinges on the acquisition of certain attitudes and dispositions. Indeed, a number of critical thinking scholars view attitudes and dispositions as the cornerstone of critical thinking (Ennis, 1991; Facione, 1992; Marzano, 1991). They include, for example, the willingness: (1) to engage intensely in tasks even when answers or solutions are not immediately apparent, (2) to seek clarity and precision when information is unclear, and (3) to take a position (and change it) when the evidence is sufficient to do so (Marzano, 1991).

Writing apprehension, also called writing anxiety, is arguably the most heavily researched affective issue in writing (McLeod, 1992). Writing anxiety relates to "negative, anxious feelings (about oneself as a writer, one's writing situation, or one's writing task) that disrupt some part of the writing process" (McLeod, 1992, p. 427). McLeod (1992) indicates that writers become agitated as they compose when their plans, goals, and strategies for writing are disrupted. She contends that whether disruptions cause writing anxiety or not depends not only on the writers' repertoire of writing strategies as well as their emotional response to disruptions. She argues that competent writers function as strategic self-managers in "monitoring their emotional state, allocating their energy, stopping themselves when they are over-excited - so that their emotions work for them rather than against them" (McLeod, 1992, p. 433).

III. PROPOSED TAXONOMY OF INDICATORS OF LEARNING FOR ENGLISH COMPOSITION

As mentioned in the introduction of this paper, the taxonomy of indicators of learning for English composition that follows was derived from existing surveys and scholarly commentaries on the objectives of English composition programs as well as empirical studies of writing

competence based on evaluations of students' texts, surveys of writing instructors, and studies of students' composing processes. The indicators of learning are organized according to the categories discussed in the previous section. In each description of an indicator, relevant studies and articles are cited to justify its inclusion in the taxonomy.

1. KNOWLEDGE

1.1. KNOWLEDGE OF THE COMPOSING PROCESS

Specific knowledge and skills correspond to the processes of planning, drafting, and reworking a paper. Competent writers have a rich conceptualization of the process of composing and a large repertoire of strategies, rules, plans, frames, and evaluation criteria for composing.

Flower and Hayes (1979) see composing as constituting three processes: planning, translating, and reviewing. Planning constitutes the subprocesses of generating ideas and plans, organizing ideas and goals, and setting procedural and substantive plans. Translating entails expressing ideas and goals in verbal forms. Reviewing consists of the subprocesses of evaluating and revising, which may focus on either plans or text. The three composing processes do not occur in discrete, linear stages, rather they recur in a nonlinear fashion (Witte & Cherry, 1986). For example, experienced writers constantly return to earlier steps such as planning in order to carry out later ones (Flower, 1981, p. 50).

Flower and Hayes (1980) use the terms "rhetorical situation" and "rhetorical problem" to describe the context in which composing occurs. The rhetorical situation relates to the nature of the assignment and audience, what the writer has produced so far, what is at stake for the writer, and the circumstances for composing (Flower & Hayes, 1979). The rhetorical problem is a product of the rhetorical situation and the writer's goals related to the effect the writer wants to have on the reader; the voice the writer wants to project; the writer's efforts to create meaning; and the writer's selection of a particular kind of text (Ruth & Murphy, 1988).

Some qualities of competent writers' knowledge of the composing process include the

following:

1.1.1 UNDERSTANDING OF THE RHETORICAL PROBLEM

In their study of experienced and inexperienced writers, Flower and Hayes (1980) found that experienced writers responded to all aspects of the rhetorical problem. Experienced writers defined the rhetorical problem with their readers in mind, while inexperienced writers limited their representation of the problem to the features and conventions of written texts. Overall, experienced writers were able to conceptualize the rhetorical problem with more breadth and depth and greater elaboration and sophistication than inexperienced writers.

1.1.2 COMPOSING - STRATEGIES AND METACOGNITION

Flower (1981) views the composing process as a problem-solving activity that entails nine steps ranging from exploring the rhetorical problem to editing for connections and coherence. She found that experienced writers have a large repertory of efficient strategies to address each step of the writing process. For instance, an experienced writer may rely on a host of discovery procedures, such as brainstorming, listing, freewriting, or making analogies, to generate ideas for writing.

Competent writers exhibit metacognitive control, that is, they strategically monitor and control their own composing process in order to draw on composing techniques as they need them (Flower, 1981). Furthermore, competent writers are resourceful and can "shift and adapt strategies from one writing situation to the next" (Faigley et al., 1985, p. 168).

In summary, competent writers have a large repertory of composing strategies and they strategically monitor the composing process to use or adapt a strategy as needed.

1.1.3 KNOWLEDGE OF THE PLANNING PROCESS

Planning relates to writing goals such as exploring the rhetorical problem, defining purpose, setting up a procedural plan, and generating and organizing ideas. According to Flower

and Hayes (1981), poor writers usually have only ill-defined or sketchy writing goals, whereas, competent writers develop a dense network of goals which they are adept at operationalizing into specific subgoals that guide the composition of their texts.

Writers' plans are created and revised throughout the composing process. During this process, competent writers use both the text and the rhetorical situation to generate new plans and goals, whereas less-skilled writers may rely strictly on the topic for inspiration (Faigley, et al., 1985). Competent writers develop elaborate optional plans for composing, reflect critically on these plans, and use goal conflicts resulting from disparate plans to foster invention (Schriver, 1992). To produce new goals from the existing text, competent writers may look for a focus, determine what they really mean, pursue an interesting feature of the text, or looking for some contradiction or objection to what has been written (Flower & Hayes, 1981).

Other related competencies of skilled writers include how to adjust the pre-writing process in keeping with the importance of the writing task (Couture & Rymer, 1993) and how to select and limit one's writing subject (Greenberg, 1988).

1.1.4 KNOWLEDGE OF THE REVIEW PROCESS

Sommers (1980) found that novice writers saw revision as proofreading, a time to clean up the prose by making sentence-level or vocabulary changes. Rather than engaging in "meaning preserving" revisions, experienced writers engage in "meaning-changing" revisions (Faigley & Witte, 1981). They try to see and solve text problems from the reader's perspective. They look for a wider range text problems, in particular, incongruities between their intention and execution (Sommers, 1980). They can pull their ideas out of a paper and refine them and then work their ideas back into the context of their paper (Berieter & Scardamalia, 1987). They view revision as a process involving different stages with a different agenda for each stage. They may initiate meaning-based changes in one stage and concentrate on making their prose more efficient in the next (Faigley et al., 1985).

1.1.5. SELF-REFLECTION

Coe suggests that students of composition programs should know "how to intervene in their own writing processes" when they encounter problems, such as writing blocks (1991, p. 76). He indicates that students should be able to devise solutions to writing problems by (1) reflecting on their own motives, strengths, weaknesses, and goals as writers; (2) defining their writing problems precisely; and (3) employing techniques for dealing with process problems. For instance, Flower suggests that writers who catch themselves trying to "write a perfected final draft in one slow, laborious pass-through" may find it more useful to "satisfice" by "accepting an adequate, but imperfect expression in order to get on with more important problems" (1981, p. 38-39).

1.2. KNOWLEDGE OF THE NEED FOR RHETORICAL SPECIFICATION

Students should know how to choose the appropriate form of discourse based on the rhetorical considerations of audience, purpose, and voice, which affect the writer's choice of language, sentence structure, and content (Odell, 1981). Penfield (1991) suggests that an overt focus on rhetorical considerations distinguishes advanced composition courses from freshmen composition courses. Survey results support her contention. Witte et al.'s (1981) survey of freshmen composition courses revealed a concern with correctness, development, and organization, while Hogan's (1980) survey of advanced composition courses identified an emphasis on writing style and audience awareness.

1.2.1 AUDIENCE AWARENESS AND WRITER-READER INTERACTION

Varying conceptions of audience exist within composition studies. The audience may mean "actual people external to a text," or it may "suggest an audience implied by the text itself," but however real the audience may be, "the writer must create a context into which the reader may enter and to varying degrees become the audience that is implied there" (Park, 1982, p. 249). In the

process of composing, both novice and skilled writers consider creating this context, however, novice writers often forget their plans involving the reader or have difficulties coordinating their writing goals with their reader in mind (Schriver, 1993). Skilled writers, on the other hand, build a complete, accurate mental representation or image of their potential readers and they use this image to decide what information to include in their writing (Flower & Hayes; 1980). Berkenkotter's (1981) study of professional writers indicated that these writers formed a "rich representation of their audience" which significantly affected their writing goals and, in turn, the composition of their texts.

A number of surveys have shown that the ability to "write clearly for an audience" and to "write for different types of readers" are important skills for college graduates (Faigley and Witte, 1981; Anderson, 1985). Writers who lack sensitivity to readers' needs often provide insufficient or inappropriate detail and elaboration (Shaughnessy, 1978). The skilled writer understands that the meaning of the text is the result of the "interaction of what both the writer and reader bring to the text" (Nystrand, et al., 1993, p. 299). From this perspective, the skilled writer effectively matches the content and the level of detail of the text to the knowledge and attitudes of the reader. Skilled writers know how to "transform writer-based prose (which works well for them) into reader-based prose (which works well for their readers as well)" (Flower, 1981, p. 144). They avoid an egocentric focus in their writing and a narrative organization that focuses on their own discovery process.

Writing is social process where the successful writer achieves a balance between his or her purposes and intentions and the expectations and needs of the reader (Nystrand, 1986). Consequently, writing is more than a product of an individual's heuristic strategies, it is also socially influenced and often socially determined (Faigley, et al., 1985). From this perspective, the skilled writer adapts his or her writing to the social context in which it is read and negotiates the needs and expectations of the reader as they interact with one another.

1.2.2. GENRE AND DISCOURSE COMMUNITY

The purpose of many advanced writing courses is to teach students how to write in a specific setting (e.g. technical, business, journalistic, or academic). Halpern (1980) argues that the rhetorical concerns of audience, purpose, voice, organization and polish should guide the development of technical, business, and other specialized writing courses. The intended learning outcome is for the student to learn the specific rhetorical concerns, specialized writing strategies, and writing conventions that exist in the setting (Carter, 1990).

The setting for writing relates to the notion of genre, which has been defined as a "typified rhetorical actions based on recurring situations" (Miller, 1984). Recurring social and cultural situations tend to regularize writing and reading practices within discourse communities (Smart, 1993). The notion of discourse communities suggests that "individual writers compose not in isolation but as members of communities whose discursive practices constrain the way they structure meaning" (Nystrand et al., 1993, p. 289). Competent writers try to tailor their writing to the "needs, values, assumptions, conventions, and expectations of the community" (Olsen, 1993, p. 188).

Both Sliven (1983) and Coe (1991) contend that advanced composition courses should teach students to analyze any type of genre in order to produce it. According to Coe "students should emerge with confidence that they can, in the future, teach themselves any genre they need to write" and "they should learn how to initiate themselves into new discourse communities by analyzing discourses to reveal the functions of formal continuities. Ideally they should also learn how to invent new forms for new purposes" (1991, p. 75). Spilka (1993) argues that writing programs should provide students with specific instruction in social analysis to prepare students to "identify, analyze, and both adapt to work with within the constraints of any particular workplace culture" (Spilka, 1993, p. 211). She argues that student writers should not only learn how to conform to a workplace, they should also learn how to "analyze and decide on which practices to emulate and which to critique and attempt to change" (Spilka, 1993, p. 211).

Empirical research supports the value of social analysis. Schriver (1993) cites a study on the composing of college students who were trained to become public policy advocates for at-risk inner city neighborhoods. The study, conducted by Peck (1991), found that students who relied on their "insider social and rhetorical knowledge of the community" composed more effective written arguments than their counterparts.

1.3. COLLABORATION

As composition instructors have adopted the perspective that competent writers produce texts within and influenced by community affiliations, with this perspective has come an emphasis on collaborative learning and writing. Trends in the workplace reinforce the importance of learning how to write collaboratively. Ede and Lunsford (1990) found that 87% of the professionals they studied write collaboratively at least some of the time. Faigley and Miller (1982) found that nearly 75% of the writers they surveyed sometimes collaborate with at least one other person in composing.

Staged in small groups, collaborative learning is a process that encourages students to think dialectically, that is, "to see one position in relationship to another, to see from different perspectives, and to tolerate ambiguity" (Kutz, et al., 1993, p. 53). An extension of collaborative learning, collaborative writing is often taught through on-going assignments which simulate the rhetorical-problem-solving activities of a specific setting, such as the workplace (Reither, 1993). Through participation in these assignments, students learn how to (1) collectively conceptualize a project based on an analysis of the rhetorical context; (2) develop a research plan to gather information; (3) exchange and evaluate information; (4) organize their findings in written reports; and (5) present their texts for use by others (Reither, 1993).

Through collaborative writing assignments, students learn how to negotiate the production of a text (Burnett, 1993; Sandberg 1993). They become aware of the pressures of personalities, politics, and time, that may bring about a premature consensus on a writing task (Burnett, 1993).

They learn how to defer consensus in order to seek clarification and encourage further consideration of the content and other rhetorical elements of the writing task (Burnett, 1993). When necessary, they defer consensus by raising objections, seeking elaboration, and suggesting alternatives. They also learn how to discourage interpersonal disagreements that may disable a project. They learn "how to disagree effectively - for example, how to show respect for others' thoughts and how to value minority opinions" (Sandberg, 1993, p. 148).

In brief, as a result of collaborative writing assignments, students should have knowledge of the task requirements of collaborative writing and as well as knowledge of the decision-making, contextual, and interpersonal dynamics that occur in the collaborative writing process.

1.4. TOPIC KNOWLEDGE

Landis (1990) makes the case for topic knowledge, that is, knowledge of the subject matter of the text. She argues that much of writing instruction consists mainly of genre knowledge and assumes that students have acquired the necessary topic knowledge. However, Langer's (1984) research on essay evaluation suggests that when a writer's knowledge is well organized, his or her writing will be coherent (see also Newell & MacAdam, 1987). Students who write weak essays may do so because they know little about the topic or because they are unable to organize what they know about the topic for the purposes of writing (Landis, 1990). In addition, less-skilled writers may have difficulty deciding the kinds and amount information to include in their essays (Landis, 1990). In contrast, experienced writers have a repository of strategies to organize their topic knowledge (Flower, 1981), and they anticipate their readers' level of knowledge of the topic (Nystrand, 1986).

2. SKILLS

2.1. WRITING SKILLS EXHIBITED IN THE TEXT

2.1.1. BASIC MECHANICS

Students writing should demonstrate the proper use of correct grammar, syntax (word order), punctuation, and spelling (Cullen, 1987; Gilson, 1989; White & Polin, 1983). Non-academic readers, in particular, object to faulty subject-verb and pronoun-antecedent agreements, unclear pronoun references, ambiguous danglers, faulty parallelisms, apostrophe errors, sentence fragments or comma splices, and run-on sentences (Harrison, 1981).

2.1.2. VOCABULARY FLUENCY

Students should select words "with an eye to a) *clarity*, aiming at the degree of precision appropriate to the context, (b) *appropriateness* to tone and purpose; (c) *effectiveness*, using specific, vivid, forceful, or unexpected words at points of emphasis; (d) *euphony*, avoiding words that are hard to pronounce together; unintended rhyme, and awkward, choppy rhythm" (Diederich, 1974, p 92). They should use words that their audience understands and that are appropriate to the rhetorical problem. They should use words in unique and interesting ways and avoid of trite, over-worked expressions (Cooper, 1977). And they should select words that convey exact meanings, show control of connotation (values implied by the use of the word), and do not violate conventions of standard written discourse (White & Polin, 1986).

2.1.3 SENTENCE CONSTRUCTION

Students should be able to craft increasingly diversified sentence structures (Mellon, 1977). Specifically, they should be able to develop sentences appropriate to the rhetorical context using control structures such as participles, appositives, absolutes, subordinate clauses, prepositional and infinitive phrases, and noun substitutes (Daiker et al, 1990). In addition, students should be able to use connective words or "rhetorical markers," such as "therefore," "although," and "for example," to help readers anticipate the relationship between sentences and the ideas they present (Daiker, et al. 1990; Flower, 1981).

Students should also be aware of certain stylistic principles at the sentence level. To avoid

"bureaucratese" in their writing, students should avoid overuse of nominalizations and the passive voice (Colomb & Williams, 1986). To enhance the readability of their texts, they should consider beginning sentences with familiar information and then proceeding to less familiar information (Cooper, 1988). To call the reader's attention to important information, they should know how to use visual devices, make direct assertions, break established patterns, and add and rearrange phrases and words (Daiker, et al., 1990).

2.1.4 ORGANIZATION BETWEEN AND AMONG SENTENCES

Students should be able to word and sequence sentences to convey temporal relationships, step-by-step processes, cause/effect, reason/purpose, and ordinal sequences arranged to a variety of criteria (Mellon, 1977). In addition, students should be able word and sequence sentences to convey geometric and spatial configurations, class/subclass inclusions and exclusions, and inferences stemming form the premise-and-conclusion system of syllogistic logic (Mellon, 1977).

2.1.5 PARAGRAPHS

Competent writers recognize that the paragraph is an important semantic device used to guide the reader from one idea to another (Kutz, et al, 1993). To effectively guide readers, they construct paragraphs using sentences that are structurally related (Christensen, 1975). When the writer adds a supporting sentence to a paragraph the reader must see the direction of modification or direction of movement (Christensen, 1975). The supporting sentence may have three basic relationships to the preceding sentence or topic sentence: (1) coordination, where the sentence emphasizes, enumerates, contradicts, or contrasts at the same level of generality; (2) subordination, where the sentence clarifies, qualifies, defines, exemplifies, or deduces; and (3) superordination, where the sentence generalizes, draws inductive conclusions, or comments on a previously stated proposition (Coe, 1988).

Using subordinate, coordinate, or superordinate sentences, students should be able to

construct paragraphs that effectively move between general and specific statements. The ability to shift back and forth between levels of generality is important because it enables writers to develop their ideas and illustrate them with specific examples (White & Polin, 1986). Shaughnessy found that basic writers have difficulty "in developing greater play between abstract and concrete statements;" their papers, she writes, "tend to contain either cases or generalizations, but not both" (1977, p. 240). In contrast, experienced writers have the "vocabulary" and "habits of generalization" to broadly define their ideas and give reasons for them (Shaughnessy, 1977, p. 240).

In brief, students should be able to write paragraphs that are structurally sound and they should be able to use coordinate, subordinate, and superordinate sentences to develop their ideas.

2.1.6 COHERENCE

Students should be able to write coherent texts. Coherence relates to the overall impression of the text's readability. The ideas, concepts, and pattern of reasoning of the writer should be understandable to the reader, that is, they should have a thematic unity and they should be presented in an systematic manner (Kantz, 1990). The writer should also observe certain conventions, specifically, redundancy and cohesion, to help the reader predict what will appear in the text (Horning, 1993).

Redundancy is the "characteristic of written language that helps ensure that the reader gets the message" (Horning, 1993, p. 84). While readers may not be conscious of its presence and importance, the skilled writer uses redundancy effectively to ensure that information is passed accurately to reader. For instance, the writer may (1) use predictable syntax such as familiar 'noun phrase-verb phrase' patterns, (2) add a referent to any unclear 'this,' (3) replace pronouns with their referents, (4) replaces dummy subjects like 'it' and 'there' with real subjects, or (5) change passives to actives (Horning, 1993). In terms of semantic redundancy, the writer may (1) include an example phrase, (2) add a "such as" phrase to specify particulars, or (3) clarify a term or

concept with a defining phrase (Horning, 1993).

Cohesion, is the "feature of a string of sentences that makes it a text rather than a disconnected set of sentences" (Horning, 1993, p. 164). To stitch sentences together, writers incorporate a variety of cohesive ties in their texts. A commonly recognized form of cohesive ties is *reference*, which includes the simple use of a pronoun to refer back to the subject in an earlier sentence. Other forms of cohesive ties include *conjunctions*, such as "instead," "in conclusion," "thus," and "however," and *lexical ties* which center on word choice such as the use of synonyms, the use of superordinate terms (like using birds for sparrow), or the repetition of the same word.

Lexical ties have been associated with good writing. In a study of the relationship between the quality of freshmen expository writing and the use of cohesive ties, Neuner (1987) found that the nature of the lexical ties that were semantically related to one another differentiated good from poor writing. Neuner called these lexical ties cohesive chains. For example, an essay about selecting mathematics as major, may have a cohesive chain related to mathematics with lexical references to mathematics such as "numbers," "they," and "number system" throughout the text. Neuner found that good essays sustained cohesive chains over greater distances of the whole text. In addition, the chains of good essays contained a greater variety of words and more mature word choices. In contrast, the chains of poor essays often used inexplicit words such as "anything," "everything," "do," or "way," which had little semantic import. Some poor essays had dominant chains that "overwhelmed the essay with the reiteration of its topic and pronouns for the topic" (Neuner, 1987, p. 100). While good essays had a dominant chain, they also had meaningful minor chains related to subthemes that constituted a significant proportion of the text. In summary, good essays seemed more fully or intensely about their subjects because they had more chains and longer chains which contained a variety of meaningful words rather than imprecise words (Neuner, 1987).

2.1.7 ORGANIZATION

Organization relates to the ability of the writer to indicate to the reader how the various elements in an essay are related (Kutz, et al., 1993). It is an ability valued by English faculty and as well as faculty in other disciplines. Breland and Jones (1984) surveyed English professors who rated essays prepared for the College Board's English Composition Test and found that the professors rated evaluation criteria such as "overall organization," "noteworthy ideas," and "statement of thesis" ahead of criteria such as "paragraphing and transition" and "sentence variety." Bridgeman and Carlson surveyed faculty from 190 academic departments at 34 universities and found that faculty evaluations of students' writing are based more on "discourse level characteristics (e.g., paper organization, quality of content) than on word- or sentence-level characteristics (e.g. punctuation/spelling, sentence structure, vocabulary size)" (1984, p. 278).

To produce an organized text, skilled writers present their ideas in an understandable manner, provide structural cues, and include expected functions (e.g. introduction, conclusion) in their texts. To present their ideas in an understandable manner, skilled writers use strategies to develop and focus their ideas prior to writing (Flower, 1981). By using strategies to refine their ideas, the essays of skilled writers exhibit a 'natural structure' that goes beyond an artificially imposed structure (Cullen, et al., 1987). The organizational pattern used is logical, easy to follow and rhetorically convincing, the essay works well as a whole (Gilson, 1989). In terms of structural cues, skilled writers use textual headings to demonstrate their method of organization. Textual headings should contain information about the function and content of upcoming material (Colomb & Williams, 1986). In terms of expected functions, skilled writers provide a clear, engaging description of the purpose of their text in the introduction. They also make clear how all parts of the essay relate to carrying out their purpose (Cullen, et al., 1987). They try to fashion the beginning of a text so that it establishes a "mutual frame of reference or a shared social reality between writer and reader" (Fitzgerald, 1992, p. 23). In the course of the text, they proportion the text effectively, that is, they maintain the lengths of various parts of the essay in a manner consistent with their importance (Cullen, et al., 1987). And finally, at the end, they achieve

effective closure and complete the actions promised.

2.1.8 VOICE

Students should be able to "assume a personal authority for that writing that is being produced: write with an identifiable, personally-defined purpose, in an individual, personal voice" (Kutz, et al. 1993, p. 159). An authoritative voice suggests "having a say" or having something to offer (Rose, 1989, p. 112). Authoritative writing achieves a balance between "formally correct discourse which has little substance to say" and "the idiosyncratic response which seems to ignore audience expectations" (Wall, 1986, p. 106).

The importance of the reader's perception of an authoritative voice depends on the rhetorical situation. When the writer's intention is to analyze, interpret, argue a position, or persuade the reader, voice takes on more importance (Rose, 1989). Similarly, when the writer's topic has less to do with herself and more to do with the reader's beliefs, knowledge, or opinions, voice becomes more important (Rose, 1989).

Writers with their own personal voice and authority generally have both extensive experience in writing and expansive knowledge of the topics they write about. A writer without one or both of these qualities may produce a text that conforms to the conventions of a discourse community but displays little use of higher-order thinking skills, such as analysis or synthesis. Wall found that one of her students adopted the "ready-made language" of the academic discipline because his lack of experience with writing "meant that he had not yet developed a sense of authority that would allow him to see his own language in terms of a genuine dialogue with that of a published writer" (1986, p. 129). Williams and Colomb (1990) observed that even experienced writers imitate the voice of a discourse community when their understanding of the field is thin and unstructured.

2.2. COGNITIVE SKILLS

2.2.1 FOCUS, CONTRAST, AND CLASSIFICATION

Focus, contrast, and classification are fundamental intellectual processes, identified by Odell (1977), that students should be able to perform through writing. Focus relates to the ability of the writer to shift focus and bring the reader's attention to various facets of a complex topic. For instance, a student should be able to examine an issue by shifting the focus of his or her text to the various perspectives of the parties involved in the issue. Contrast pertains to the ability of the writer to demonstrate what an "item (a word, a person, an object, a feeling, etc.) is not, seeing how it differs from other items" (Odell, 1977, p. 111). Contrast relates to students' ability to sense and communicate disparities between, for example, the potential and the actual as well as the ideal and the real. Classification relates to the ability to signal relationships among groups and the ability to create groups that follow some implicit or explicit principle of categorization (Faigley, et al., 1985). For example, one of the freshmen composition exercises at the University of Texas, Austin asks students to classify 12 dangers inherent in running (Faigley, et al., 1985). The essays are rated on the basis of how well students formulate conceptually-distinct categories and classify the items appropriately to the categories that have been established.

2.2.2 CONCEPT FORMULATION

Chaffee indicates that concepts function as "organizers of experience," they act to "group aspects of our experience based on their similarity to one another" (1990, p. 350). Students should be able formulate concepts and convey them in writing through a process of generalizing and interpreting (Chaffee, 1990; Coe, 1988). The process of generalizing involves focusing on the common properties between things to develop the requirements of the concept (Chaffee, 1990). The process of interpreting involves looking for different examples to apply the concept to in order to see if they meet the requirements of the concept (Chaffee, 1990). In developing concepts, students should be able to effectively convey in writing the basic properties of the concept, examples of the concept, and distinctions between the concept from related concepts.

2.2.3 ANALYSIS

The skills of analysis relate to students ability to examine an idea or argument in terms of its coherence and internal structure, which includes its element, their relationships, and the principles governing their order (Spear, 1983). Analytical skills are required in most expository writing courses. For example, the skills of analysis can be used to (1) determine an author's purpose or point of view when not stated; (2) identify an author's main conclusion, supporting claims, and evidence; (3) distinguish facts from opinions and relevant details from irrelevant details; (4) recognize bias in language; and (5) trace the relationship of paragraphs to each other and to the aim of the discourse. Students should be able to effectively convey the results of their analysis in writing. In addition to textual analysis, students should be able to explain and analyze political, natural, historical, or interpersonal situations (Spear, 1983). Finally, students should be able to apply the skills of analysis to resolve their own problems, which may relate to inconsistencies in their own conceptions of a situation or an idea (Rubin, 1993). In brief, the skills of analysis relate to students' abilities to look outward and examine the ideas and arguments of others and to look inward to examine their own ideas.

2.2.4 WRITING INDUCTIVE AND DEDUCTIVE ARGUMENTS

Students should be able develop and write arguments to convince people for a variety of purposes. Secor (1983) identifies four principle types of arguments, each of which seeks to answer a different question: (1) What is this thing? (2) What caused it or what effects does it have? (3) Is it good or bad? and (4) What should we do about it? The questions relate respectively to the following propositions: categorical propositions, causal statements, evaluations, and proposals. Arguments that support categorical propositions show that the subject belongs in the category (Secor, 1983). Arguments supporting causes and effects identify plausible causes or show effects. Arguments that make evaluations identify plausible criteria and often demonstrate consequences as

well. And, proposals require a combination of smaller arguments to demonstrate a situation, evaluate it as a problem, and argue for a course of action. In developing arguments, students should be able to adapt their arguments to a "given occasion and audience by such means as organization, establishing an appropriate character for the speaker, modifying the patterns of sentences, using appropriate words and figures of speech" (Diederich, 1974, p. 94).

Students should be the able to arrive inductively at a generalization from data (Faigley, et al., 1985). Generalizations are often framed as solutions to ill-structured problems (i.e. problems whose solutions cannot be entirely proven to be correct.) Solutions to ill-structured problems should be based on a rationale that includes (1) accurate and relevant data that provide the grounds for the rationale, (2) standards that ensure the adequacy of the data (e.g. representativeness), (3) backing of the rationale (e.g. ethical standards, experience), (4) a review of alternative solutions, and (5) answering counterarguments (Walvoord & McCarthy, 1990).

Deductive arguments are characterized by those arguments in which the premises are intended to provide absolutely conclusive reasons for accepting the conclusions (Moore & Parker, 1992). Constructing deductive arguments often requires the ability to construct a series of syllogisms, which are, simply put, two-premise deductive arguments (ex. All men are mortal. Socrates is a man. Therefore, Socrates is mortal.)

In many instances, students are required to use syllogistic reasoning to support their deductive arguments. These instances often occur when exact and reliable decision procedures, such as laws, regulations, or codes of conduct, are available students to validate their conclusions. For instance, the writing assessment program at the University of Texas Austin, requires students to argue the innocence or guilt of a student accused of cheating by applying the regulations on academic cheating to the student's case (Faigley, et al., 1985). The argument must be constructed in such a manner that by stating the relevant regulations and the alleged infraction, the conclusion that follows is true.

Of course, in many situations the procedures to validate conclusions are neither exact nor

reliable. In addition, the evidence to support a conclusion may not be so tidy. Nonetheless, people may still suppose their premises provide conclusive support for their conclusion. Under these circumstance, students should be able to evaluate the soundness and strength of these arguments in terms of their structure, accuracy, and backing. In addition, Gage (1990) indicates that students in advanced composition courses should be able reason through syllogisms, detect invalid syllogisms, and also detect and evaluate an enthymeme - when one of the premises is unstated and implied by the audience - as a rhetorical device.

2.2.5 SYNTHESIS

Synthesis relates to the ability to "combine ideas to form a news whole or come to a conclusion, making inferences about future events, creating solutions, and designing plans of action" (Chaffee, 1990, p. 48). In English composition, a synthesis writing assignment may require the student to read several texts and write an essay which reorganizes and integrates the information around a controlling idea (Flower, 1990). Or a student may be required to synthesize the research findings of others and evaluate what subsequent research is needed (Sternglass, 1993).

2.2.6 DIALECTICAL THINKING

Dialectical thinking is a process of examining a subject by positing chains of contrary views (Jones, 1993). For example, dialectical thinking occurs when a student conceives of the possibility of an assertion as being wrong and then engages in an internal dialogue to compare the opposing assertions on the basis of available evidence (Kuhn, 1991).

Dialectical thinking is vital for examining issues and writing expository and argumentative essays about them (Jones, 1993). It encourages students to present the complexity of an issue, to examine their own beliefs in light of an issue, to recognize and describe the connections, ambiguities, and contradictions inherent in an issue, and to suspend judgment and take on different

perspectives surrounding an issue (Covino, 1990; Kutz, et al., 1993).

Dialectical thinking also encourages writers to be more sensitive to their audience. Dialectical thinking invites the writer to consider the reader's way of thinking and encourages the writer to address the needs, expectations, and objections of the reader (Kutz, et al., 1993).

2.2.7 METAPHORICAL THINKING

Students should be able to think and write metaphorically, that is, have an eye for resemblances and associations, in order to illuminate and express their understanding of ideas, concepts events, behaviors, and conditions. McQuade indicates that "by allowing writers to form images and concepts of one thing in terms of another, metaphor helps perceive new connections that can frequently lead to unexpected insights" (1983, p. 225). For instance, a metaphor may enable a student to show how small events or particular examples can represent larger patterns (Kutz, et al., 1993).

Students should also be able to work with metaphors as a heuristic for invention and organizing their ideas. Specifically, students should be able to think metaphorically to stimulate their preliminary thinking, control their particular emphasis, and frame their ideas and observations in writing (McQuade, 1983).

2.2.8. READING-WRITING SKILLS

Effective reading requires an active construction of the meaning of the text by the reader. That is, by reading what others say, the reader constructs knowledge for himself or herself on a high level of abstraction and generality (Chall, 1983). Research on the reading strategies of inexperience and experienced readers has shown that inexperienced readers focus on just getting the facts "right" rather than constructing a meaning of the text (Haas, 1993). Experienced readers, on the other hand, use a range of strategies to derive the meaning of the text (Haas, 1993). These strategies include inferring situational information about the author, the historical and cultural

context of the text, and the motives and desires of the writer (Haas, 1993).

English faculty often give out writing assignments that require students to use multiple and sometimes conflicting source texts that do not provide ready-made answers to the assignment (Haas, 1993). One of the aspired learning outcomes of such an assignment is for students to synthesize the readings, that is, "to reorganize and integrate information around a controlling idea" which is substantive in nature (Flower, 1990, p. 50). Students often have difficulty with this task. In an empirical study of students' reading-to-write skills, Flower (1990) found that, despite receiving the same prompt for writing, students exhibited a range of organizing plans to guide the processes of reading and writing, and in most cases students engaged in summarizing rather than synthesizing. Students who successfully completed syntheses overcame difficulties related to interpreting the instructor's expectations, negotiating the conflicting views of source texts, deciding what to count as evidence, choosing from a range of alternative organizing ideas, and transforming knowledge into meaningful packages.

3. AFFECT

Affect is an umbrella term used to describe a wide range of concepts and phenomena such as feelings, motivation, emotions, attitudes, beliefs, values, appreciations, and preferences (McLeod, 1992). Affective learning is important because students attitudes and beliefs about writing influence their use of the knowledge they possess. Affective learning is often taught through the "hidden" curriculum (e.g. faculty modeling of attitudes, dispositions, values) rather than through explicit instructional practices. Consequently, indicators of affective learning may prove to be difficult to detect using curricular artifacts. Since syllabi often state the overall objectives of a course, given the proposed methodology, they may be one of the few avenues available to detecting these indicators.

A review of literature indicates that English compositions seek to promote the following affective outcomes:

3.1 MOTIVATION

Motivation has been cited as a factor that is essential to successful writing. It refers to "one's inner impulses or drive toward some goal" (McLeod, 1987, p. 428). Motivation relates to students' willingness to write and their self-direction in writing. Both intrinsic factors of motivation , such as the internal desire to write, and the extrinsic factors of motivation, such as getting good grades, influence students' willingness to write. In particular, the intrinsic factors of motivation have been linked to successful writers. For example, Davis, Scriven, & Thomas (1987) maintain that successful writers see writing as valuable for accomplishing personal goals. Fitzgerald (1990) contends that writers are driven by the need or desire for connecting minds.

To understand students' motivation to write, McLeod (1992) suggests that researchers look at how writing tasks influence students' conceptions of their competence, their control over tasks, and their tendencies to focus on desirable or undesirable outcomes. She suggests that each of these factors may play a role in influencing students' motivation to write. In particular, students' sense of self-control may have a significant affect on their motivation to complete a writing task. For instance, McLeod (1992) cites research where students who felt little control over their success or failure at a task abandon problem-solving strategies. On the other hand, students who attributed failure to a lack of effort rather than lack of ability, persisted at the task.

3.2 CONFIDENCE & RISK TAKING

Students should have confidence in their ability to write and their ability to learn to write better (Diederich, 1975). They should be willing to try out new words, syntactical patterns, and rhetorical devices as a necessary step in their mastery (Belanoff, 1991; Davis, Scriven, & Thomas, 1987; Diederich, 1975; Mellon, 1977). Belanoff points out that writing instructors want students to "take risks, to try harder things which may make their writing look as though it's deteriorating depending on when we decide to look at it" (1991, p. 56). Dogged insistence on correctness

undermines exploration and risk-taking. Conversely, teaching students to realize that they have choices regarding invention strategies, problem solving, and revision encourages them to take more risks as writers (Baker, 1993).

3.3. ACCEPT CRITICISM

Students should willingly accept criticism and also critically examine and evaluate their own writing even if its means that may have to revise, discard, or recompose writing already "completed" (Mellon, 1977). Students who are averse to evaluation and revision may hold the view that the "perfect" paper can be produced in one pass-through or that writing is guided by inspiration, not trial and error (see Flower, 1981). Using writing portfolios to teach writing encourages students to revise because the method suggests to students that "writing occurs over time, not in a single setting" (Baker, 1993, p. 156).

3.4 SENSITIVITY TO SITUATIONAL EXIGENCIES

Students should plan their texts and manage their time according to the situational exigencies of the writing task (Couture & Rymer, 1993; Mellon, 1977). In a study of writing in the workplace, Couture and Rymer (1993) found that professional writers manage their time around writing tasks based on their assessment of the routine or non-routine nature of the task. Routine tasks involve structured, known problems. Non-routine work focuses on unstructured or semi-structured problems set in uncertain situations. Professional writers devote significantly more time to planning writing tasks in novel or complex situations.

3.5 SENSITIVITY TO AUDIENCE

Students should be able to recognize that readers' representations of a situation may differ from their own (Rubin, 1984). Hence, they should provide a context for their views (Odell, 1979). In addition, students should have an appreciation of audiences whose cultural and

communication norms may differ from the student writer. They should be sensitive to native egocentrism and cultural bias in their viewpoints.

3.6 SENSITIVITY TO CONTEXT

Students should be sensitive to the communication context in which writing occurs, and they should be willing to alter their communication processes to match the situations in which communication occurs, and to know why and how they are doing so (Witte, 1992). This can be developed through assignments that simulate specific rhetorical contexts such as those in the workplace.

This disposition is a departure from the cognitive model of composing advanced by Flower and Hayes, which critics claim lacked a social or contextual view of transcribing. Bizzel maintains that "producing text cannot take place unless the writer can define her goals in terms of the community's interpretive conventions" (1982, p. 227). Specifically, the writer should have the ability to ascertain and tailor discourse to the conventions, values, and expectations of a discourse community (Olsen, 1993).

3.7 INTELLECTUAL HUMILITY

Students should recognize the legitimacy of other points of view on a given subject (Odell, 1979). At the same time, students should acknowledge the "limitations of their own point of view, indicating what their theories can not explain, taking note of and trying to reconcile evidence that appears to contradict their ideas or feelings" (Odell, 1979, p. 11).

IV. FEASIBILITY ISSUES

In his review of the English major in 1987, Stewart comments that "the only accurate statement one can make about the major is that it is in constant flux" (1989, p. 189). The flux in the field is visible in the different philosophies English programs have, among other things, about

what constitutes "good" writing, how students learn to write, and what students should learn as writers. Given the diversity among English programs, this review concludes with a discussion of several questions that will help us discuss the suitability of the indicators presented and the feasibility of using curricular artifacts to measure the presence of the indicators within composition programs. These questions include:

1. Can curricular artifacts accurately reflect the different models of writing and instructional approaches faculty use?

In a review of the intellectual history of composition studies, Nystrand et al. (1993) document the evolution of four distinct models of writing which have brought about an assortment of instructional approaches. The models represent different views regarding the role of the writer, text, and reader, and the processes of language learning (Nystand, et al. 1993). The different views influence faculty's instructional practices. For instance, English faculty continue to debate whether the skills for genre writing are best learned explicitly through task-specific instruction or intuitively through participation in the interpretive community (see for example, Freedman, 1993; Williams & Colomb, 1993).

As suggested earlier in this review, we have reasons to believe that curricular artifacts can register these variations in professional views. For example, White and Polin (1983, 1986) used instructional materials, in part, as a means to identify different views on writing instruction at the 19 state universities in California. Using a faculty survey, they gathered information on assignments, texts, and class activities, and, in doing so, identified six patterns of writing instruction, including the:

1) literature approach - uses poetry anthologies and works of literature and focuses on analyzing literature and process models of composition;

2) composing-process approach - focuses on teaching invention skills and provides a workshop setting for writing;

3) rhetorical modes approach - use rhetorical texts and nonfiction anthologies and proceeds developmentally through discourse modes;

4) basic skills approach - works on the basic units of prose (e.g. phrase, sentence, paragraph) and uses grammar and usage handbooks;

5) in-class workshop approach - focuses on in-class writing, no textbook materials are related to this approach;

6) service course approach - allows for practice in those writing activities necessary for success in other courses (e.g. term and research papers) (White & Polin, 1983, p. 193).

2. Does the taxonomy of learning indicators accommodate the various models of writing and methods of instruction adequately?

The taxonomy in this paper incorporates many of the writing competencies rooted in various models of writing and methods of instruction. For instance, the taxonomy includes many of the skills identified in the problem-solving model of writing, which stresses the mental processes and problem-solving strategies of writers, and the social-interactive model of writing, which emphasizes the linkages between writers and readers (Fitzgerald, 1990). However, such an approach may not be feasible. That is, by including indicators in the taxonomy that are compatible with one model, we may find that we are contradicting the principles of another model. By avoiding allegiances to one specific model of writing, the taxonomy may come across as diffused or contradictory. Clearly, this is an issue that should be discussed by the advisory board of English faculty who will review this paper.

3. Can we develop a method to reliably and accurately identify learning indicators using curricular artifacts (e.g. texts, exams, assignments, syllabi)?

Prior studies have used both syllabi and exams to determine learning objectives (e.g Nordvall & Braxton, 1985; Ratcliff, et al., 1991). However, both studies stressed the importance of coding procedures and coder training. Questions surrounding the use of curricular artifacts to derive indicators require careful consideration. For instance, how many indicators will ultimately appear on the coding sheet? How many can we reasonably expect a coder to work with? If we

must narrow the list, which are the most important? What does the coder look for in a curricular artifact to confirm the existence of an indicator? Which curricular artifact takes priority in coding? The syllabi, texts, assignments, or exams? Can the indicators be mutually exclusive? For instance, can a coder distinguish an instructional emphasis on "coherence" from "organization" by looking at a syllabus? Does the coder merely look for the existence of the indicator or does the coder also form some judgment about the proficiency level expected, too? What kind of background and training should a coder have?

4. Is the proposed methodology compatible with the beliefs that underlie the evaluation methods of English composition faculty?

English faculty use several methods to evaluate students' writing including holistic, analytic, and primary-trait scoring (White, 1994). In many respects, the indicators identified in this paper reflect the evaluation criteria common to these methods; however, the evolution of these methods, specifically, holistic scoring, raises questions about the ease to which consensus will be obtained on the taxonomy of indicators.

The method of holistic scoring, which judges an essay on the basis of its overall quality, runs counter to notion presented in this review that one can fully explicate the subskills of writing. Holistic scoring reflects the perspective that "since we do not know enough about the supposed subskills of writing and since writing as a whole is more than a sum of its parts, writing should be evaluated for its overall quality" (White, 1994, p. 231).

Within the confines of holistic scoring, we do find indirect support for the development of indicators. For example, White (1994), Daiker and Grogan (1990), and others make the case for the explicit use of scoring guides in holistic scoring. Scoring guides are typically short, one page descriptions of the standards used to rate essays. They may emphasize depth of insight, complexity of thought, and control of coherence, organization, diction, syntactic variety, and transitions - criteria consistent with the indicators identified in this paper.

While holistic scoring is a popular method for evaluating student writing, the approach does have limitations. Huot (1990) indicates that the product orientation of holistic scoring is unsuitable for informed decisions about composition instruction or student writing, and holistic scoring may not be especially sensitive to particular textual features of student writing.

Primary-trait and analytic scoring methods, which rely on more specific criteria for evaluating essays, resolve many of the drawbacks of holistic scoring. These methods are not commonly used in large-scale assessments of students' writing because of the cost and the lack of agreement about writing skills. However, primary-trait scoring is a useful means of evaluation in the classroom because it provides students "not only judgments about the success of their writing, but also with information about some of the strategies they are using in trying to do a particular type of writing" (Olsen, 1993, p. 297).

In short, we find faculty rely on criteria for evaluation; however, in the case of holistic scoring, they do not detail criteria into specific subskills. In the case of primary-trait-scoring, faculty identify specific subskills, but the subskills pertain to specific types of writing or specific writing contexts. The challenge is to try to understand the uniqueness of contexts and to also find out what skills are common across writing situations (Shriver, 1993).

References

Adams, Katherine H. & Adams, John L. "Advanced Composition: Where Did It Come From? Where Is It Going?" in Katherine H. Adams & John L. Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Adelman, Clifford. "Introduction: Indicators and Their Discontents," in Clifford Adleman (ed.) *Signs & Traces: Model Indicators of College Student Learning in the Disciplines*, Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, 1989.

Anderson, P.V., "What Survey Research Tells Us About Writing at Work," in Lee Odell and David Goswami (eds.) *Writing in Nonacademic Settings*, New York, NY: The Guildford Press, 1985.

Bartholomae, David & Petrosky, Andrew. *Facts, Artifacts, and Counterfacts: Theory and Method for a Reading and Writing Course*, Portsmouth, NH: Boynton/Cook Publishers, 1986.

Baker, Nacy Westrich. "The Effect of Portfolio-Based Instruction on Composition Students' Final Examination Scores, Course Grades, and Attitudes Toward Writing," *Research in the Teaching of English*, Vol. 27, No. 2, May 1993, p. 155-177.

Belanoff, Pat. "The Myths of Assessment," *Journal of Basic Writing*, Vol. 10, No. 1, 1991, p. 54-66.

Bereiter, Carl, Scardamalia, Marlene, *The Psychology of Written Composition*, Hillsdale, NJ: Lawrence Erlbaum Associates, 1987.

Berkenkotter, C. "Understanding a Writer's Awareness of Audience" *College Composition and Communication*, Vol. 32, 1981, p. 388-399.

Bizzel, Patricia. "Cognition, convention, and certainty: What we need to know about writing," *Pre/Tex*, Vol. 3, 1982, p 213-243.

Bloom, Benjamin S. (ed.) *The Taxonomy of Educational Objectives: Cognitive Domain*, New York, NY: McKay, 1956.

Blyler, Nancy Roundy. "Purpose and Composition Theory: Issues in the Research,"*Journal of Advanced Composition*, Vol. 9, 1989, p. 97-111.

Brand, Alice G. "The Why of Cognition: Emotion and the Writing Process," *College Composition and Communication*, Vol. 38, No 4, December 1987, p. 436-443.

Brand, Alice G. *A Director of Composition Talks to Students about College Writing Assessment*, 1991, ERIC Doc. No. ED 340 038.

Braxton, John M., Nordvall, Robert C., "Selective Liberal Colleges: Higher Quality as well as Higher Prestige?" *Journal of Higher Education*, Vol. 56, No. 5, September/October 1985.

Breland, Hunter, M. & Jones, Robert J. "Perceptions of Writing Skills," *Written Communication*, Vol. 1, No. 1, January 1984, p. 101-119.

Bridgeman, Brent & Carlson, Sybil B. "Survey of Academic Writing Tasks," *Written Communication*, Vol. 1, No. 2, April 1984, p. 247-280.

Burnett, Rebecca E. "Decision-Making During the Collaborative Planning of Coauthors" in in Ann M. Penrose and Barbara M. Stiko (eds) *Hearing Ourselves Think: Cognitive Research in the College Writing Classroom*, New York: Oxford University Press, 1993.

Carter, Michael. "What is *Advanced* About Advanced Composition? ATheory of Expertise in Writing," in Katherine H. Adams & John L. Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Chaffee, John, *Thinking Critically, Third Edition*, Boston: Houghton Mifflin, 1990.

Chall, J. *Stages of Reading Development*, New York, NY: McKay, 1983.

Christensen, Francis. "A Generative Rhetoric of the Paragraph," in W. Ross Winterowd, *Contemporary Rhetoric: A Conceptual Background with Readings*, New York: Harcourt Brace Jovanich, 1975.

Coe, Richard M. *Toward a Grammar of Passages*, Carbondale,IL: Southern Illinois University Press, 1988.

Coe, Richard M. "Advanced Composition as Fishing Pole: Principle, Processes, Practices," in Katherine H. Adams & John L. Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Colomb, Gregory. & Williams, Joseph. "Perceiving Structure in Professional Prose" in L. Odell & D. Goswami (eds.), *Writing in non-academic settings*. New York: Guilford, 1986, p. 87-128.

Cooper, Allene. "Given-New: Enhancing Coherence Through Cohesiveness," *Written Communication*, Vol. 5, No. 3, July 1988, p. 352-367.

Cooper, Chrarles R. "Holistic Evaluation of Writing," in Charles R. Cooper & Lee Odell, *Evaluating Writing*, Buffalo, NY: State University of New York, 1977.

Cooper, Charles R. & Odell, Lee. *Evaluating Writing*, Urbana, IL: National Council of Teachers of English 1977.

Cooper, Charles, Cherry, Roger, Gerber, Rita, Fleischer, Stefan, & Copley, Barabara. "Writing Abilities of Regularly-Admitted Freshmen at SUNY/Buffalo," Unpublished study, State University of New York at Buffalo, 1980.

Couture, Barbara & Rymer, Jone. "Composing Processes on the Job by Writer's Role and Task Value," in Rachel Spilka (ed.), *Writing in the Workplace: New Research Perspectives*, Carbondale, IL: Southern Illinois Press, 1993.

Covino, William A. "The Grammar of Advanced Writing," in Katherine H. Adams & John L.

Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Cullen, Roxanne, et al. *Research Findings of the Committee on Research and Assessment in Writing , Department of Languages and Literature, Ferris State College*, 1987, ERIC Doc No. ED 281 417.

Daiker, Donald & Grogan, Nedra. "Selecting and Using Sample Papers in Holistic Evaluation," *Journal of Advanced Composition*, Vol. 9, 1990, p. 159-171.

Daiker, Donald A., Kerek Andrew, Morenberg, Max. *The Writer's Options: Combining to Composing*, 4th Edition, New York, NY: Harper & Row, 1990.

Davis, Barbara Gross, Scriven, Michael, &Thomas, Susan. *The Evaluation of Composition Instruction, 2nd. Edition*, New York: Teachers College Press, 1987.

Diederich, Paul. *Measuring Growth in English*, Urbana,IL: National Council of Teachers of English, 1974.

Ede, Lisa. & Lunsford, Andrea. A. *Sing::lar texts/plural authors: Perspectives on Collaborative Writing*. Carbondale: Southern Illinois University Press, 1990.

Ennis, Robert. "Critical Thinking: A Streamlined Conception," in *Teaching Philosophy*, 14:1, March 1991.

Ewell, Peter T. "Establishing a Campus-Based Assessment Program," in D.F. Halpern (ed.) *Student Outcomes Assessment: What Institutions Stand to Gain*. New Directions for Higher Education, no. 59, San Francisco: Jossey-Bass, 1987.

Ewell, Peter T. & Jones Dennis P. "Actions Matter: The Case for Indirect Measures in Assessing Higher Education's Progress on the National Education Goals," *Journal of General Education*, Vol. 42, No. 2, 1993, p. 123-148.

Facione, Peter A., "Empirical Methods of Theory and Tool Development for the Asseessment of College Level Critical Thinking and Problem Solving," paper prepared for the NCES, U.S. Dept. of Education, Nov. 1992.

Faigley, Lester & Miller, T.P. "What we learn from writing on the job" *College English*, Vol. 44, p. 557-569.

Faigley, Lester & Witte, Stephen. "Anaylzing Revision," *College Composition and Communication*, Vol. 32, 1981, p. 400-414.

Faigley, Lester, Cherry, Roger D., Jolliffe, David A., Skinner, Anna M. *Assessing Writers' Knowledge and Processes of Composing*, Norwood, NJ: Ablex, 1985.

Fitzgerald, Jill. *Towards Knowledge in Writing: Illustrations from revision studies*. New York, NY: Springer-Verlag, 1992.

Flower, Linda S. *Problem-Solving Strategies for Writing*, New York, NY: Harcourt Brace Jovanovich, 1981.

Flower, Linda S., et al. *Reading-To-Write: Exploring a Cognitive and Social Process*, New York: Oxford University Press, 1990.

Flower, Linda S. & Hayes, John R. *A process model of composition*, Pittsburgh, PA: Carnegie-Mellon University, 1979.

Flower, Linda S. & Hayes, John R. "The cognition of discovery: Defining a rhetorical problem," *College Composition and Communication*, Vol 31, 1980, p. 21-32.

Freedman, Aviva. "Show and Tell? The Role of Explicit Teaching in the Learning of New Genres," *Research in the Teaching of English*, Vol. 27, No. 3, October, 1993.

Gage, John T. "A General Theory of the Enthymeme for Advanced Composition," in Katherine H. Adams & John L. Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Gilson, Joan T. *The Writing English Proficiency Test at UMKC: An Intelligent Answer to an Unintelligent Question*, 1989, ERIC ED 309 430.

Grandy, Jerliee. "Models for Developing Computer-Based Indicators of College Student Learning in Computer Science," in Clifford Adleman (ed.) *Signs & Traces: Model Indicators of College Student Learning in the Disciplines*, Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, 1989.

Greenberg, K. "Assessing Writing: Theory and Practice" in James McMillan (ed.) *Assessing Students' Learning, New Direction for Teaching and Learning*, San Francisco: Jossey-Bass, 1988.

Gregory, Marshall W. "The Process of Wrting, the Formation of Character, and the (Re)formation of Society," *Perspectives,* 1994.

Haas, Christina. "Beyond 'Just the Facts': Reading as Rhetorical Action" in Ann M. Penrose and Barbara M. Stiko (eds) *Hearing Ourselves Think: Cognitive Research in the College Writing Classroom*, New York: Oxford University Press, 1993.

Halpern, Jeanne W. "The Structure of Advanced Composition." *Journal of Advanced Composition*, Vol. 1, 1980, p. 45-52.

Harriston, Maxine. "Not All Errors are Created Equal: Non-Academic Readers in the Professions Respond to Errors in Usage." *College English*, Vol. 43, 1981, p. 794-806.

Haswell, Richard. "Textual Research and Coherence: Findings, Intuition, Application," *College English*, Vol. 51, 1989, p. 305-319.

Hays, Janice N. "The Development of Discursive Maturity in College Writers," in Janice N. Hays, Phyllis A. Roth, John R. Ramsey, & Robert D. Foulke (eds.) *The Writer's Mind: Writing as a Mode of Thinking*, Urbanna, IL: National Council of Teachers of English, 1983.

Herrick, Virgil E., *Toward Improved Curriculum Theory*, Chicago: University of Chicago Press,

1950.

Hogan, Michael P. "Advanced Composition: A Survey," *Journal of Advanced Composition*, Vol 1, 1980, p. 45-52.

Horning, Alice S. *The Psycholingusitics of Readable Writing: A Multidisciplinary Exploration*, Norwood, NJ: Ablex, 1993.

Huot, Brian. "Reliability, Validity, and Holistic Scoring: What We Know and What We Need to Know," *College Composition and Communication*, Vol. 41, No. 2, May 1990, p. 201-213.

Jones, Libby Falk. "Exploring Beliefs Through Dialectical Thinking," in Toni-Lee Capossela (ed.) *The Critical Writing Workshop*, Portsmouth, NH: Boynton/Cook, 1993.

Kantz, Margaret. "Promises of Coherence, Weak Content, and Strong Organization: An Analysis of the Students' Texts" in Flower, L.S., et al. *Reading-To-Write: Exploring a Cognitive and Social Process*, New York: Oxford University Press, 1990.

Kitzhaber, Albert R. *Themes, Theories, and Therapy: The Teaching of Writing in College*, New York, NY: McGraw-Hill, 1963.

Krathwohl, David R., et al. (eds.) *Taxonomy of Educational Objectives, Handbook II: Affective Doman.* New York: David MaKay, 1964.

Kuhn, Deanna. *The Skills of Argument.* New York, NY: Cambridge, 1991.

Kutz, Eleanor, Groden, Suzy Q., Zamel, Vivian. *The Discovery of Competence: Teaching Learning with Diverse Student Writers*, Portsmouth, NH: Boynton/Cook, 1993.

Landis, Kathleen. "Knowledge of Composition," *Freshman English News,* Vol. 19, No. 1, p. 9 - 13, Fall 1990.

Langer, J. "The effects of available information on responses to school writing tasks," *Research in the Teaching of English*, Vol. 18, No. 1, 1984, p. 27-44.

Lunsford, Andrea. "Cognitive Development and the Basic Writer," *College English*, 41, 1979, p. 38-46.

McKinnon, Joe W. "The College Student and Formal Operations," in John W. Renner et al., *Research, Teaching and Learning with Piaget Model,* Norman, OK: University of Oklahoma Press, 1976.

McLeod, Susan H. "The Affective Domain and the Writing Process: Working Definitions," *Journal of Advanced Composition*, Vol. 11, 1992, p. 95-105.

McQuade, Donald. "Metaphor, Thinking, and the Composing Process," in Janice N. Hays, Phyllis A. Roth, John R. Ramsey, & Robert D. Foulke (eds.) *The Writer's Mind: Writing as a Mode of Thinking*, Urbanna, IL: National Council of Teachers of English, 1983.

Martin, Cleo. "The rhetoric program at the University of Iowa" in J. Nell (ed.) *Options for*

Teaching English, New York, NY: MLA, 1978.

Marzano, Robert J. "Creating an Educational Paradigm Centered on Learning Through Teacher-Directed, Naturalistic Inquiry," in Lorna Idol and Beau Fly Jones (eds.) *Educational Values and Cognitive Instruction: Implications for Reform*, Hillsdale, NJ: Lawrence Erlbaum, 1991.

Mellon, John C. *A Taxonomy of Compositional Competencies,* ERIC Document ED 157 058, 1977.

Miller, C. "Genre as social action," *Quarterly Journal of Speech*, Vol. 70, 1984, p. 151-167.

Moffet, J.W. *Active Voice*, Montclair, NJ: Boynton/Cook, 1981.

Moore, Brooke Noel & Parker, Richard. *Critical Thinking, Third Edition*, Moutnain View, CA: Mayfield Publishing.

Moss, Beverly J. & Walters, Keith, "Rethinking Diversity: Axes of Difference in the Writing Classroom," in Lee Odell (ed.)*Theory and Practice in the Teaching of Writing: Rethinking the Discipline*, Carbondale: Southern Illinois University Press, 1993.

Neel, Jasper, (ed.). *Options for the Teaching of Written Composition.* New York, NY: MLA, 1978.

Newell, George, MacAdam, Phyllis, "Examing the Source of Writing Problems," *Written Communication*, Vol. 4, No. 2, April 1987, p. 156-174.

Neuner, Jerome, L. "Cohesive Ties and Chains in Good and Poor Freshmen Essays," *Research in the Teaching of English*, Vol. 21, No. 1, Fall 1987, p.92-105.

Nystrand, Martin. *The Structure of Written Communication: Studies in Reciprocity between Writers and Readers*, New York, NY: Academic Press, 1986.

Nystrand, Martin, Greene, Stuart, Wiemelt, Jeffrey. "Where Did Compostion Studies Come From?" *Written Communication*, Vol. 10 No. 3, July 1993, p. 267-333.

Odell, Lee. "Measuring Changes in Intellectual Processes as One Dimension of Growth in Writing," in Charles R. Cooper & Lee Odell (eds.) *Evaluating Writing*, Urbana, IL: National Council of Teachers of English, 1977.

Odell, Lee. *Redefining "Mature Writing"*, May, 1979. ERIC Doc. ED 173 781.

Odell, Lee. "Defining and Assessing Competence in Writing," in Charles Cooper (ed.) *The Nature and Measure of Competency in English*, Urbana, IL" National Council of Teachers of English, 1981.

Odell, Lee. "Writing Assessment and Learning to Write: A Classroom Perspective," in Lee Odell (ed.)*Theory and Practice in the Teaching of Writing: Rethinking the Discipline*, Carbondale: Southern Illinois University Press, 1993.

Olsen, Leslie. "Research on Discourse Communities," in Rachel Spilka (ed.), *Writing in the*

Workplace: New Research Perspectives, Carbondale, IL: Southern Illinois Press, 1993.

Park, D.B. "The meanings of audience," *College English*, Vol. 44, p. 247-257.

Patterson, Jane. "Learning Through Teaching," in Lee Odell (ed.)*Theory and Practice in the Teaching of Writing: Rethinking the Discipline*, Carbondale: Southern Illinois University Press, 1993.

Paul, Richard. "Teaching Critical Reasoning in the Strong Sense: Getting Behind World Views," in Richard Talaska (ed.) *Critical reasoning in contemporary culture*, Albany: State University of New York Press, 1992.

Penfield, Elizabeth. "Freshman English/Advance Writing: How Do We Distinguish the Two," in Katherine H. Adams & John L. Adams, *Teaching Advanced Composition: Why and How*, Portsmouth, NH: Boynton/Cook Publishers, 1991.

Perry, William G. *Forms of Intellectual and Ethical Development In the College Years*, New York: Holt, Rinehart, and Winston, Inc., 1970.

Ratcliff, James L., et al., *The Effect of Coursework Patterns, Advisement, and Course Selection on the Development of General Learned Abilities of College Graduates*, University Park, PA: Center for the Study of Higher Education, The Pennsylvania State University, 1991.

Rose, Shirley K., "The Voice of Authority: Developing a Fully Rhetorical Definition of Voice in Writing," *The Writing Instructor*, Spring 1989, p. 111-118.

Reither, James A. "Bridging the Gap: Scenic Motives for Collaborative Writing in Workplace and School," in Rachel Spilka (ed.), *Writing in the Workplace: New Research Perspectives*, Carbondale, IL: Southern Illinois Press, 1993.

Rubin, Donald, "Social Cognition and Written Communication," *Written Communication*, Vol. 1, No. 2, April 1984, p. 211-245.

Rubin, Lois, "Improving Critical Thinking Through Problem Analysis," in Toni-Lee Capossela (ed.) *The Critical Writing Workshop*, Portsmouth, NH: Boynton/Cook, 1993.

Ruth, Leo & Murphy, Sandra. *Designing Writing Tasks for the Assessment of Writing*, Norwood, NJ: Ablex Publishing, 1988.

Sandberg, Kate. "Collaborative Learning and Critical Thinking," in Toni-Lee Capossela (ed.) *The Critical Writing Workshop*, Portsmouth, NY: Boynton/Cook, 1993.

Schriver, Karen A. "Teaching Writers to Anticipate Readers' Needs," *Written Communication*, Vol. 9, No. 2, April 1992, p. 179-208.

Schriver, Karen A. "Audience Awareness in the Writing Classroom," in Ann M. Penrose and Barbara M. Stiko (eds) *Hearing Ourselves Think: Cognitive Research in the College Writing Classroom*, New York: Oxford University Press, 1993.

Schubert, William. *Curriculum: Perspective, Paradigm, and Possibility*. New York,NY: MacMillan, 1986.

Secor, Marie. "Modes of Thinking, Modes of Argument," in Janice N. Hays, Phyllis A. Roth, John R. Ramsey, & Robert D. Foulke (eds.) *The Writer's Mind: Writing as a Mode of Thinking*, Urbanna, IL: National Council of Teachers of English, 1983.

Shaughnessy, Mina P. *Errors and expectations: A guide for the teacher of basic writing*, New York, NY: Oxford University Press, 1977.

Slevin, James F. "Interpreting and Composing: The Many Resources of Kind" in Janice N. Hays, Phyllis A. Roth, John R. Ramsey, & Robert D. Foulke (eds.) *The Wirter's Mind: Writing as a Mode of Thinking*, Urbanna, IL: National Council of Teachers of English, 1983.

Smagorinsky, Peter. "The Writer's Knowledge and the Writing Process: A Protocol Analysis," *Research in the Teaching of English*, Vol. 25, No. 3, 1991, p. 339-364.

Sommers, Nancy. "Revision Strategies of Student Writers and Experienced Adult Writers," *College Composition and Communication*, Vol. 31, 1989, p. 378-388.

Squires, G. *First Degree: The Undergraduate Curriculum*. Buckingham, UK: Open University Press, 1990.

Spilka, Rachel. "A Challenge for Professional Writing Specialists in Academia," in Rachel Spilka (ed.), *Writing in the Workplace: New Research Perspectives*, Carbondale, IL: Southern Illinois Press, 1993.

Spear, Karen I. "Thinking and Writing: A Sequential Curriculum for Composition," *Journal of Advanced Composition*, Vol. IV, 1983, p. 47-63.

Stark, Joan S. et al. *Reflections on Course Planning*. Technical Report 88-C-0002.2. Ann Arbor: University of Michigan Regents, 1988.

Sternglass, Marilyn S. "Writing Development as Seen Through Longitudinal Research," *Written Communication*, Vol. 10, No. 2, April 1993, p. 235-261.

Stewart, Donald C. "What Is an English Major and What Should It Be?" *College Composition and Communication*, Vol. 40, No. 2, May 1989., p. 188-200.

Sturm, Rita. "Advance Compostion, 1980: The State of the Art." *Journal of Advanced Composition*, 1, 1980, p. 37-43.

Terenzini, Patrick T. "Assessment with Open Eyes: Pitfalls in Studying Student Outcomes," *Journal of Higher Education*, Vol. 60, No. 6, Nov./Dec. 1989.

Toombs, William & Tierney, William G. *Meeting the Mandate: Renewing the College and Departmental Curriculum*, ASHE-ERIC Higher Education Report No. 6, Washington, D.C.: George Washington University.

Wall, Susan V., "Writing, Reading, and Authority - A Case Study" in Bartholomae, David & Petrosky, Andrew. *Facts, Artifacts, and Counterfacts: Theory and Method for a Reading and Writing Course*, Portsmouth, NH: Boynton/Cook Publishers, 1986.

Walvoord, Barbara E. & McCarthy, Lucille P., *Thinking and Writing in College*, Urbana, IL: National Council of Teachers of English, 1990.

Warren, Jonathan. "A Model for Assessing Undergraduate Learning in Mechanical Engineering" in Clifford Adleman (ed.) *Signs & Traces: Model Indicators of College Student Learning in the Disciplines*, Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, 1989.

Werner, Warren W., Thompson, Isabelle K., Rothschild, Joyce. "A Survey of Specialized Writing Courses for English Majors: 1975-76 to 1985-86." *Rhetoric Review*, Vol. 6, 1988, p. 204-217.

White, Edward M. *Teaching and Assessing Writing*, San Francisco: Jossey-Bass, 1985.

White, Edward M. *Teaching and Assessing Writing, Second Edition*, San Francisco: Jossey-Bass, 1994.

White, Edward M. & Polin, Linda G. *Research in Effective Teaching of Writing: Final Phase 1 Report*, Washington, D.C.: National Institute of Education, August 1982, Revised May 1983, ERIC ED239 292.

White, Edward M. & Polin, Linda G. *Research in Effective Teaching of Writing. Volume I and II: Final Project Report.* Washington, D.C.: National Institute of Education, 1986.

Wilcox, T.W. *The Anatomy of College English*, San Francisco, CA: Jossey-Bass, 1973.

Williams, Joseph M. & Colomb, Gregory G., "The University of Chicago," in Toby Fulwiller & Art Young (eds.) *Programs That Work: Models and Methods for Writing Across the Curriculum*, Portsmouth, NH: Boynton/Cook, 1990.

Witte, Stephen. *"No Guru, No Method, No Teacher:" The Communication Domain the NACSL*, paper commisioned by the National Center for Education Statistics for the Novermber 17-18 Workshop on the Assessment of Higher Order Thinking and Communication Skills of College Graduates, 1992.

Witte, Stephen, Cherry, Roger, D., Meyer, Paul R. *The Goals of Freshmen Writing Programs as Perceived by a National Sample of College and University Program Directors and Teachers*, Washington, D.C.: Fund for the Improvement of Postsecondary Education, 1982. ERIC ED 216 395.

Witte, Stephen P. & Cherry, Roger D. "Writing Processes and Written Products in Composition Research," in Charles R. Cooper & Sidney Greenbaum (eds.) *Studying Writing: Linguistic Approaches*, Beverly Hills, CA: Sage, 1986.